Release notes for ENDF/B Development n-081_Tl_203 evaluation

April 26, 2017

- **psyche** Warnings:

    1. Gamma width not in agreement with PSYCHE's expectations
    *FILE 2 / SECTION 151 / ISOTOPE MASS = 203. L = 1 / AT RESONANCE
    ENERGY 1.47300E+04 EV. THE GAMMA WIDTH 1.21227E+00 DEVIATES TOO
    MUCH FROM THE AVERAGE 2.98303E-01 (0): Gamma width*

    ```
    FILE  2
        SECTION 151
            ISOTOPE MASS = 203. L =  1
                        AT RESONANCE ENERGY  1.47300E+04 EV. THE GAMMA WIDTH  1.21227E+00 DEVIATES TOO MUCH FROM THE AV
    ```

- **recent** Warnings:

    1. Statistical weight of certain L values were incorrect
    0: RRR goof (a)

    ```
    Calculate Cross Sections from Resonance Parameters (RECENT 2015-1)
    ===============================================================================
    Retrieval Criteria-----------        MAT
    File 2 Mimimum Cross Section- 1.0000E-10 (Standard Option)
    Reactions with No Background-    Output (Resonance Contribution)
    ... [481 more lines]
    ```

- **fudge-4.0** Warnings:

    1. Cross section does not match sum of linked reaction cross sections
    crossSectionSum label 0: total (Error # 0): CS Sum.

    ```
    WARNING: Cross section does not match sum of linked reaction cross sections! Max diff: 2.27%
    ```

    2. Cross section does not match sum of linked reaction cross sections
    crossSectionSum label 1: (z,n) (Error # 0): CS Sum.

    ```
    WARNING: Cross section does not match sum of linked reaction cross sections! Max diff: 12.80%
    ```

- **fudge-4.0** Errors:

    1. The spin statistical weights are off, indicating missing channels
    resonances / resolved / MultiLevel_BreitWigner (Error # 0): badSpinStatisticalWeights

    ```
    WARNING: The spin statical weights for L=1 sums to 2.25, but should sum to 3.0.  You have too few channels for r
    ```

    2. Calculated and tabulated Q values disagree.
    reaction label 41: n[multiplicity:'2'] + Tl202 + gamma (Error # 0): Q mismatch

    ```
    WARNING: Calculated and tabulated Q-values disagree: -7516522.915344238 eV vs -7.849e6 eV!
    ```

    3. Calculated and tabulated Q values disagree.
    reaction label 42: n[multiplicity:'3'] + Tl201 + gamma (Error # 0): Q mismatch

    ```
    WARNING: Calculated and tabulated Q-values disagree: -14093480.46627808 eV vs -1.4721e7 eV!
    ```

4. Calculated and tabulated Q values disagree.
   reaction label 43: n[multiplicity:'4'] + Tl200 + gamma (Error # 0): Q mismatch

```
WARNING: Calculated and tabulated Q-values disagree: -22549568.7460022 eV vs -2.2924e7 eV!
```

5. Calculated and tabulated Q values disagree.
   reaction label 44: Tl204 + gamma (Error # 0): Q mismatch

```
WARNING: Calculated and tabulated Q-values disagree: 6924468.893280029 eV vs 6.656e6 eV!
```

- `njoy2012` Warnings:

  1. Recoil is not given, so one-particle recoil approximation used.
     heatr...prompt kerma (0): HEATR/hinit (4)

     ```
     ---message from hinit---mf6, mt102 does not give recoil za= 81204
                        photon momentum recoil used.
     ```

- `acelst` Warnings:

  1. The incident energy grid is not monotonic for this angular distribution
     0: Bad Ang. Dist.

     ```
     ACELST WARNING - Processing Ang.Dist.MT          2
                      E-grid non-monotonic   1.700000000E+01 1.700000000E+01
     ```

- `endf2htm` Warnings:

  1. Build of a section of the HTML page failed because the format hasn't been implemented in ENDF2HTM.
     MF32MT151: Unimplemented

     ```
     At line 2659 of file endf.f
     Fortran runtime error: Bad value during integer read
     ```